

Heavy-Duty FORKLIFT TRUCKS

10-16 ton

FD100-3H FD115-3 FD120-3 FD135-3
FD150S-3 FD160S-3



Innovated Engine

6BG1T diesel engine has the performance to meet the emission levels required in Stage II / Tier 2 emission control standards in the U.S. (EPA), Europe and Japan.

Powerful Engine

114kW(155PS) / 2000r.p.m
537N·m (54.8kgf·m)1800r.p.m



Improved Drawbar Pull and Gradeability!

Max. Drawbar Pull

122kN (12,500kgf)
(27,560lbf)

(FD100-3H with load)

Gradeability at 1.6km/h (1mph)

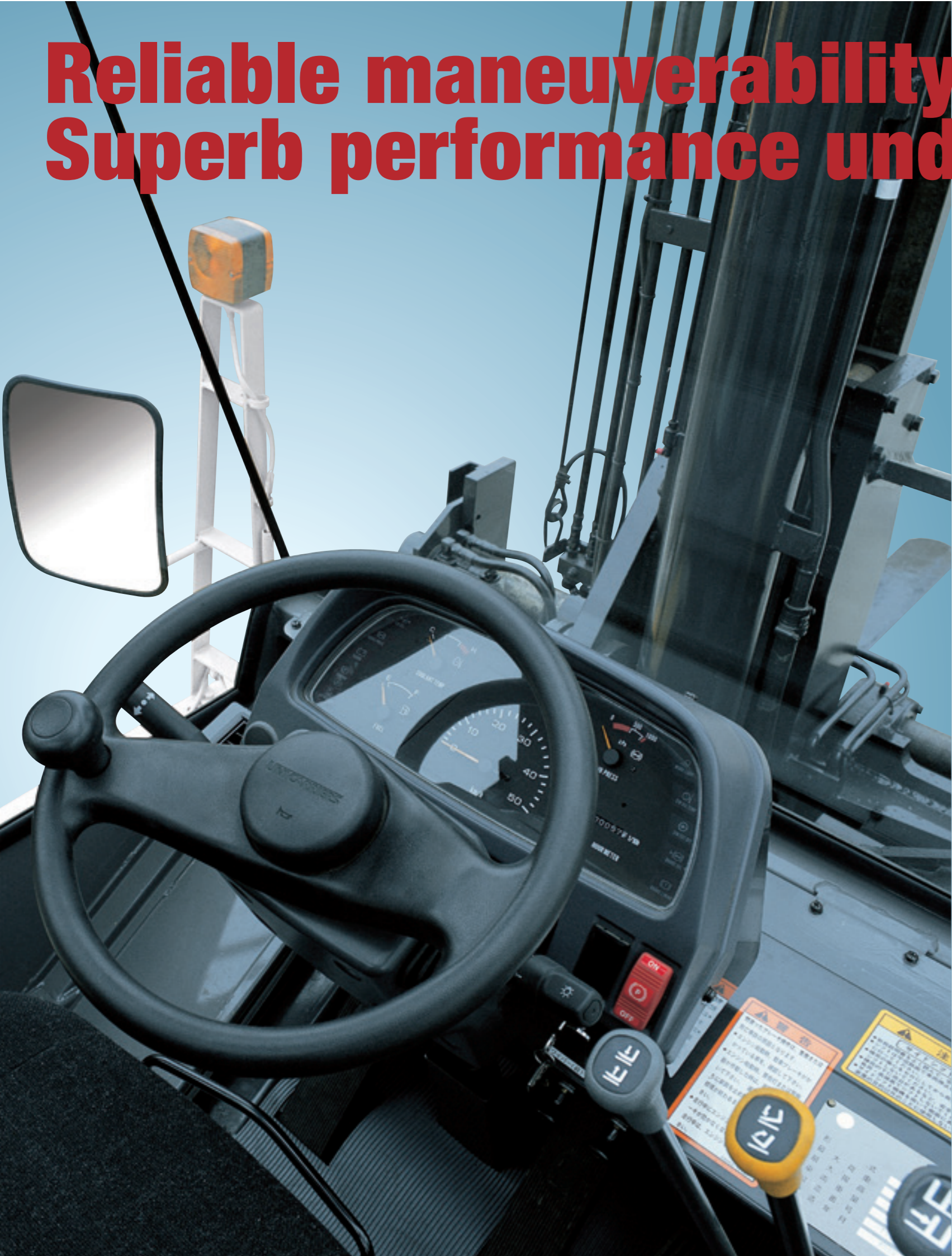
47%(25.2°slope)

(FD100-3H with load)



TCM yellow color available as an option.

Reliable maneuverability & safety. Superb performance under hard working conditions.



Three Speed Automatic Transmissions

By automated speed control, you can comfortably drive the truck just same as passenger cars.

(A) Finger Touch Shift Lever

Soft touch lever changes, achieved by magnetic valves.

(B) Easy Drive Mode Selections

Interchangeable by simple switch operations between power mode (1st → 2nd → 3rd gear) and economy mode (2nd → 3rd gear)

(C) Constant Travel Speed

By a dial switch, able to get the most suitable speed you require. (1st, 2nd, and automatic changing speeds)

(D) Combined Type Switch Lever

(Lighting and Turn Signal)
Turn-signal with self-cancelling mechanism

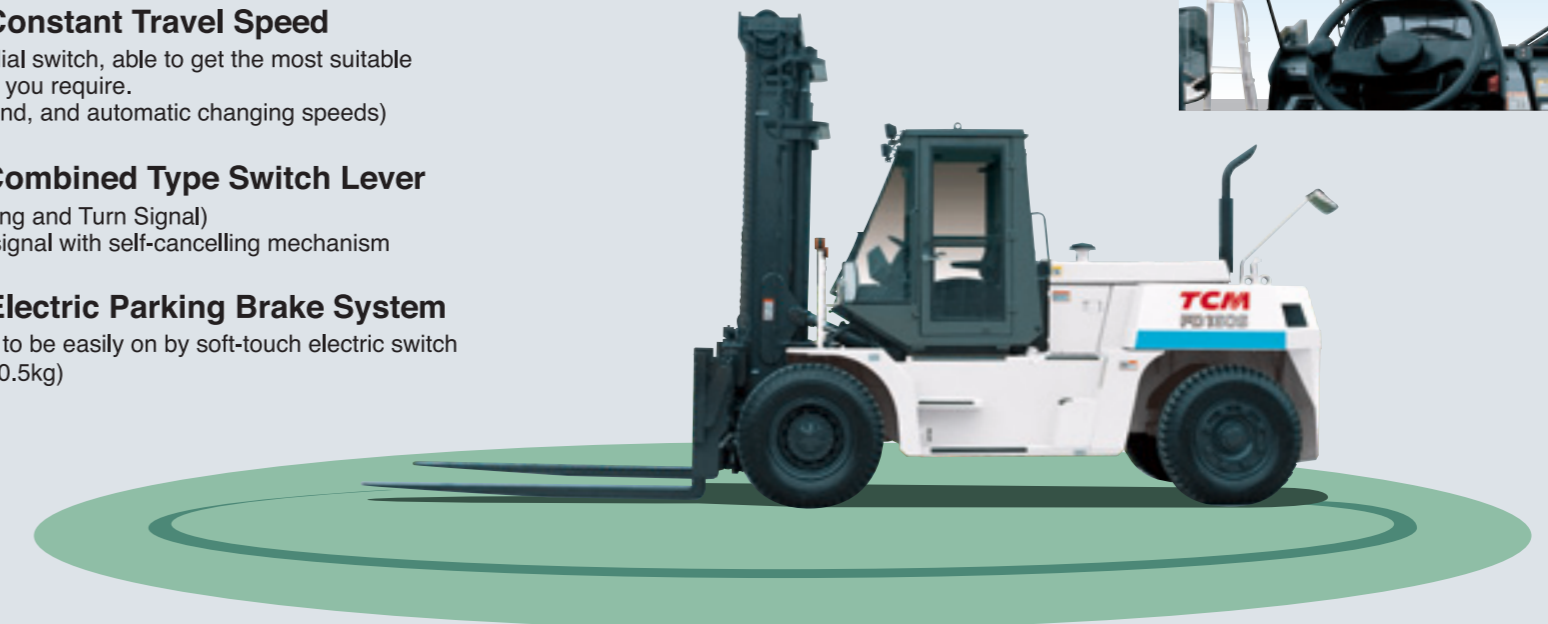
(E) Electric Parking Brake System

Brake to be easily on by soft-touch electric switch (Only 0.5kg)

Improved Visibility by Pillar-less Cabin (Option)

No front nor rear pillars secure wider visibility. Front visibility improved by 10 percent. (compared to conventional models)

No pillar cabin substantially contributes to increasing safety cargo handlings as well as travelling.



Integrated Instrument Panel



Deluxe Multi-Functional Driver Seat with Suspension (Option)

Forward and backward slidings, up and down as well as turnable functions.



Small Steering Wheel Diameter

Improved steering wheel contribute to much comfortable physical feeling.



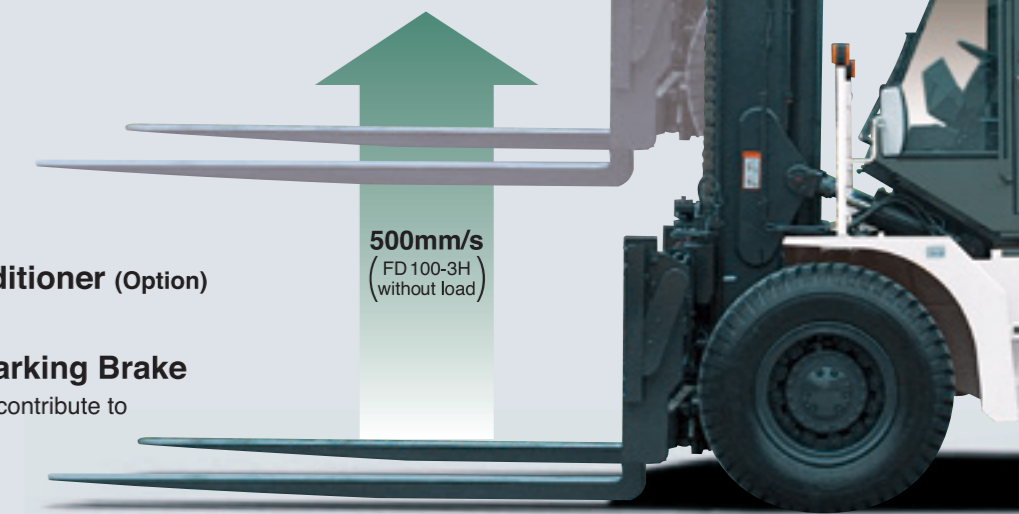
Large Capacity Air Conditioner (Option)

Cooling capacity:4000kcal/h

Dependable Wet-Disc Parking Brake

No pad adjustments substantially contribute to saving of maintenance cost.

"Industry top class lifting speed"





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- Photos and illustrations may or may not include optional equipment and accessories
- Produced in ISO certified factory.

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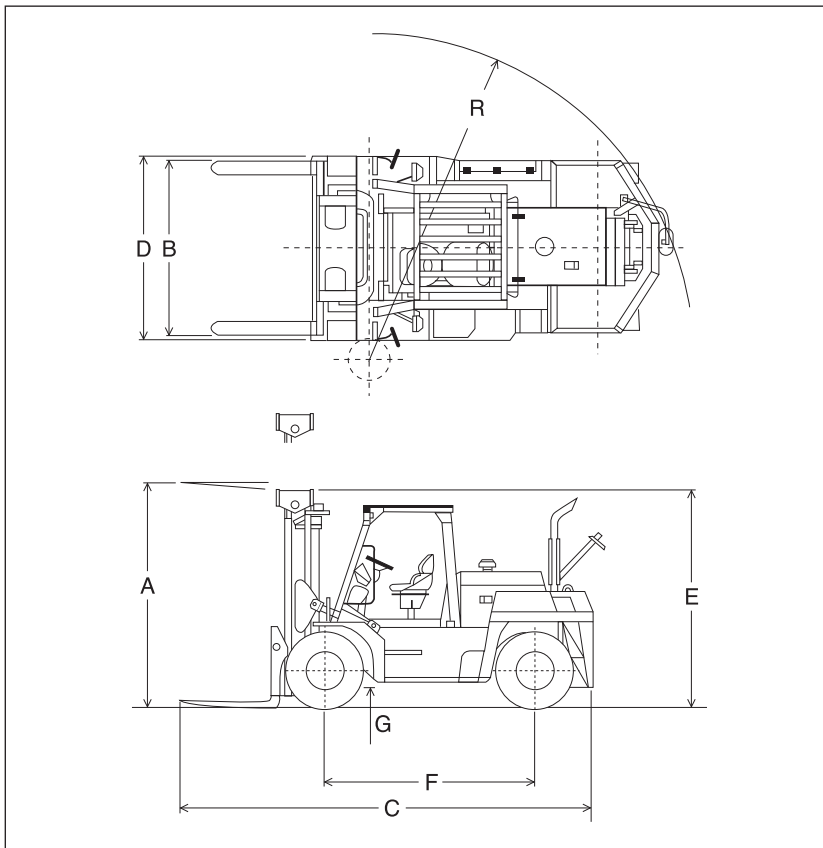
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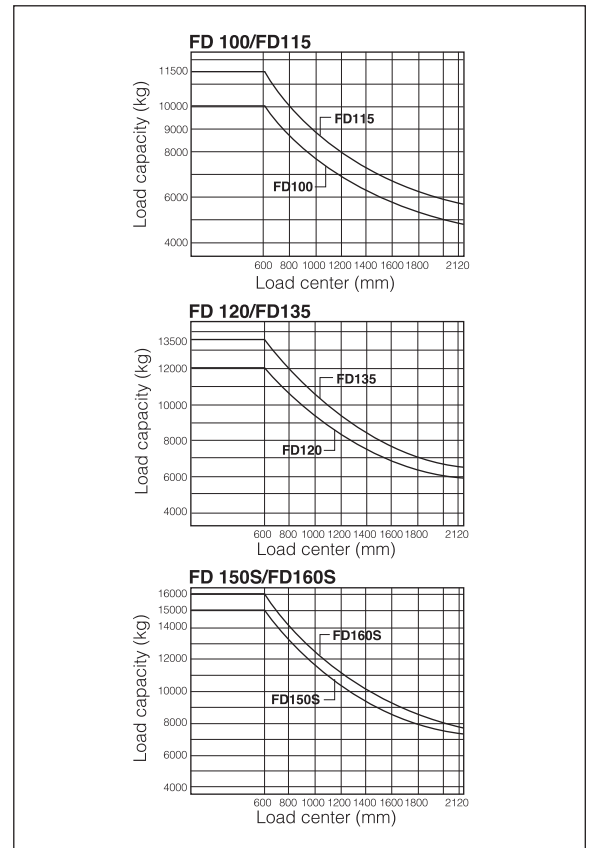


CATALOGUE No. FS06-91K/E
Printed in Japan TA-1603-04

■ Dimensions



■ Load Charts



■ Standard Specifications

Model		FD100-3H	FD115-3	FD120-3	FD135-3	FD150S-3	FD160S-3		
Performance	Load capacity	kg (lbs)	10000 (22000)	11500 (25500)	12000 (26500)	13500 (30000)	15000 (33000)	16000 (35000)	
	Load center	mm (in)	600 (24)	600 (24)	600 (24)	600 (24)	600 (24)	600 (24)	
	Maximum fork height	mm (in)	A 3000 (118.1)	3000 (118.1)	3000 (118.1)	3000 (118.1)	3000 (118.1)	3000 (118.1)	
	Lifting speed : with load	mm/s (fpm)	460 (90.5)	450 (88.6)	450 (88.6)	350 (68.9)	340 (66.9)	340 (66.9)	
	Mast tilt angle : forward / backward	deg	6 / 12	6 / 12	6 / 12	6 / 12	6 / 12	6 / 12	
	Max. Travel speed	km/h (mph)	34 (21.1)	34 (21.1)	34 (21.1)	34 (21.1)	34 (21.1)	34 (21.1)	
	Lateral fork adjustment (outside)	mm (in)	B 400 ~ 2140 (15.7~84.3)	400 ~ 2140 (15.7~84.3)	400 ~ 2140 (15.7~84.3)	470 ~ 2210 (18.5~87.0)	470 ~ 2210 (18.5~87.0)	470 ~ 2210 (18.5~87.0)	
	Turning radius (outside)	mm (in)	R 4000 (157.5)	4000 (157.5)	4000 (157.5)	4300 (169.3)	4300 (169.3)	4450 (175.2)	
Gradeability : with load (1.6km/h)	%	47	39	38	33	30	29		
Dimensions & Weight	Overall length : with fork	mm (in)	C 5490 (216.1)	5505 (216.7)	5505 (216.7)	5775 (227.4)	5775 (227.4)	5920 (233.1)	
	: without fork	mm (in)	4285 (168.7)	4285 (168.7)	4285 (168.7)	4545 (178.9)	4545 (178.9)	4685 (184.4)	
	Fork size : L x W x T	mm (in)	1220 x 180 x 75 (48.0 x 7.1 x 3.0)	1220 x 180 x 90 (48.0 x 7.1 x 3.5)	1220 x 180 x 90 (48.0 x 7.1 x 3.5)	1220 x 200 x 85 (48.0 x 7.9 x 3.3)	1220 x 200 x 85 (48.0 x 7.9 x 3.3)	1220 x 200 x 90 (48.0 x 7.9 x 3.5)	
	Overall width	mm (in)	D 2240 (88.2)	2280 (89.8)	2280 (89.8)	2360 (92.9)	2360 (92.9)	2360 (92.9)	
	Overall height : mast	mm (in)	E 2895 (114.0)	2915 (114.8)	2915 (114.8)	3150 (124.0)	3150 (124.0)	3150 (124.0)	
	: overhead guard	mm (in)	2740 (107.9)	2755 (108.5)	2755 (108.5)	2775 (109.3)	2775 (109.3)	2775 (109.3)	
	Wheelbase	mm (in)	F 2800 (110.2)	2800 (110.2)	2800 (110.2)	3100 (122.0)	3100 (122.0)	3100 (122.0)	
	Ground clearance	mm (in)	G 255 (10.0)	275 (10.8)	270 (10.6)	255 (10.0)	255 (10.0)	255 (10.0)	
Total weight	kg (lbs)	13250 (29211)	14370 (31680)	14680 (32364)	15900 (35060)	16750 (36927)	17110 (37721)		
Engine & Transmission	: model	ISUZU 6BG1T Diesel Engine							
	: piston displacement	lit. (in ³)	6.494 (396.3)						
	: rated output / engine speed	114kW (155PS) / 2000r.p.m. (SAE GROSS 117kW (157HP) / 2000r.p.m.)							
	: maximum torque / engine speed	537N · m (54.8kgf · m) / 1800r.p.m.							
Transmission	: type	Automatic power-shift transmission							
	: number of speeds	3 - 3 (Fwd / Rvs)							
Tire & Brake	Tire size	9.00-20-14PR	10.00-20-16PR	10.00-20-16PR	11.00-20-16PR	11.00-20-16PR	11.00-20-18PR		
	Brake : service	Air-over-hydraulic internal expansion							
	: parking	Built in transmission, wet multiple disc brake							
Steering system	Full hydrostatic power steering								

■ Wide View Mast

Mast Model	Capacity												Max. Fork Height		Overall Mast Height (lowered)					
	Load center 600mm(24in)														FD100-3H		FD115-FD120-3		FD135-FD160S-3	
	FD100-3H		FD115-3		FD120-3		FD135-3		FD150S-3		FD160S-3		mm		in		mm		in	
	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	mm	in	mm	in	mm	in	mm	in
VM300	10000	22000	11500	25500	12000	26500	13500	30000	15000	33000	16000	35000	3000	118.1	2895	114.0	2915	114.8	3150	124.0
VM350	10000	22000	11500	25500	12000	26500	13500	30000	15000	33000	16000	35000	3500	137.8	3145	1243.8	3165	124.6	3400	133.9
VM400	10000	22000	11500	25500	12000	26500	13500	30000	15000	33000	16000	35000	4000	157.5	3395	133.7	3415	134.4	3650	143.7
VM450	10000	22000	11500	25500	12000	26500	13500	30000	15000	33000	16000	35000	4500	177.2	3645	143.5	3665	144.3	3900	153.5
VM500	10000	22000	11500	25500	12000	26500	13500	30000	15000	33000	16000	35000	5000	196.9	3895	153.3	3915	154.1	4150	163.4
VM550	9000	19800	10350	22800	10800	23800	12150	26700	13500	30000	14400	31700	5500	216.5	4145	163.2	4165	164.0	4400	173.2
VM600	8000	17600	9200	20200	9600	21100	10800	23800	12000	26500	12800	28200	6000	236.2	4395	173.0	4415	173.8	4650	183.1

Mast Model	Overall Mast Height (raised)						Tilt Angle	Service Weight											
	FD100-3H		FD115-FD120-3		FD135-FD160S-3		Fwd / Bwd	FD100-3		FD115-3		FD120-3		FD153-3		FD150S-3		FD160S-3	
	mm	in	mm	in	mm	in	degree	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs
VM300	4395	173.0	4415	173.8	4650	183.1	6 / 12	13250	29220	14370	31690	14680	32370	15900	35060	16750	36930	17010	37510
VM350	4895	192.7	4915	193.5	5150	202.8	6 / 12	13350	29440	14470	31900	14780	32590	16020	35320	16870	37190	17130	37770
VM400	5395	212.4	5415	213.2	5650	222.4	6 / 12	13450	29660	14570	32130	14880	32810	16250	35830	17100	37700	17360	38280
VM450	5895	232.1	5915	232.9	6150	242.1	6 / 12	13700	30210	14820	32680	15130	33360	16390	36140	17240	38010	17500	38580
VM500	6395	251.8	6415	252.6	6650	261.8	6 / 12	13800	30430	14920	32890	15230	33580	16490	36360	17340	38230	17600	38810
VM550	6895	271.5	6915	272.2	7150	281.5	6 / 12	13900	30650	15020	33120	15330	33800	16600	36600	17450	38470	17710	39050
VM600	7395	291.1	7415	291.9	7650	301.2	6 / 12	14000	30870	15120	33340	15430	34020	16710	36840	17560	38720	17820	39290

■ STANDARD EQUIPMENT AND ACCESSORIES

[Equipment]

- Adjustable suspension seat with seat belt
- Air-dryer for brake line
- Cartridge type air, fuel, engine oil, converter oil and hydraulic filters
- Coolant recovery system
- Cyclopack type double element air cleaner
- Cylinder type bonnet latch
- Drawbar hook
- Durable overhead guard
- Electrically-controlled parking brake
- Engine after glow system
- Engine auto glow system
- Engine oil dipstick
- Front dual drive wheels
- Full hydrostatic power steering
- Hydraulic oil gauge (view level)
- ISUZU diesel engine with turbo-charger
- Lift circuit flow control valve
- Load check valve
- Overhead exhaust system
- Pneumatic tires
- Power brake booster
- TCM automatic 3-speed powershift transmission
- Tilt adjustable steering post
- Tilt lock valve
- Torque converter oil dipstick
- Wide view mast
- 1220mm forks

[Accessories]

- Back-up buzzer
- Electric horn
- Head lights
- Operator tool kit
- Rear combination lights (turn signal, tail, stop, back-up and side lights)
- Rear reflectors
- Rear under-view mirror
- Rear view mirrors
- Seat adjust lever
- Turn signal lights (front)

[Switch & Controls]

- Automatic transmission mode select switch (power mode / economy mode)
- Electrically-controlled direction change lever (inc. Neutral safety lock device)
- Electrically-controlled parking brake switch
- Lift lever
- Light switch
- Preheater switch (inc. starter, main switch)
- Speed change hold switch (1st fixed / 2nd fixed / Automatic speed shift)
- Tilt lever
- Turn signal lever (inc. dimmer and head light switch)

[Instruments]

- Air cleaner clogging warning indicator
- Brake air pressure meter
- Brake air pressure warning indicator
- Brake oil level warning indicator
- Charge indicator
- Converter oil temperature warning indicator
- Engine oil pressure warning indicator (inc. engine oil filter clogging warning)
- Engine water temperature meter
- Fuel meter
- Hourmeter
- Parking brake indicator
- Speedometer
- Turn signal indicator

■ OPTIONAL EQUIPMENT AND ACCESSORIES

[Equipment]

- CFC free air-conditioner
- Exhaust purifying muffler
- Fork extension sleeves
- Fork positioner (hydraulic motor type)
- Fork positioner (manual type)

- Heater & defroster
- High mast
- Long forks
- Side shifting device
- Steel cabin

[Accessories]

- Central greasing system (manual pump type)
- Fire extinguisher
- Rotating warning light
- Working light (front, rear)

* TCM products and specifications are subject to change without notice.

Heavy-Duty FORKLIFT TRUCKS

16-23 ton

FD160-2 FD180-2 FD200-2 FD230-2



Innovated Engine

6BG1T diesel engine has the performance to meet the emission levels required in Stage II / Tier 2 emission control standards in the U.S. (EPA), Europe and Japan.

Powerful Engine

125kW(170PS) / 2200r.p.m
(SAE GROSS 170HP / 2200r.p.m)



TCM yellow color available as an option.

Amazing power, yet substantially improved maneuverability, comfort & safety.

Improved Drawbar Pull and Gradeability

Max. Drawbar Pull

**119kN (12,100kgf)
(26,680lbf)**

(FD180-2 with load)

Gradeability at 1.6km/h (1mph)

20% (11.3° slope)

(FD180-2 with load)



Three Speed Automatic Transmissions

By automated speed control, you can comfortably drive the truck just same as passenger cars.

(A) Finger Touch Shift Lever

Soft touch lever changes, achieved by magnetic valves.

(B) Easy Drive Mode Selections

Interchangeable by simple switch operations between power mode (1st → 2nd → 3rd gear) and economy mode (2nd → 3rd gear)

(C) Constant Travel Speed

By a dial switch, able to get the most suitable speed you require. (1st, 2nd, and automatic changing speeds)

(D) Combined Type Switch Lever

(Lighting and Turn Signal)
Turn-signal with self-cancelling mechanism

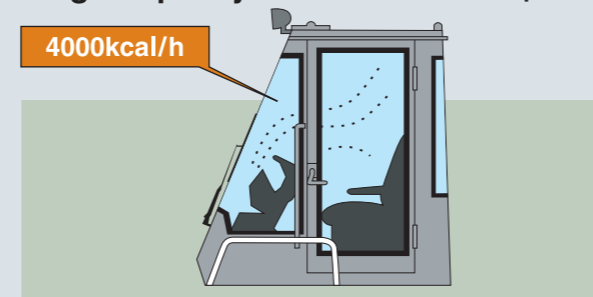


Integrated Instrument Panel



Large Capacity Air Conditioner (Option)

4000kcal/h



Sufficient Fuel Tank

One time refueling able to achieve longtime operation. Tank capacity increased to 400 liters from 300 liters.

Deluxe Multi-Functional Driver Seat with Suspension (Option)

Forward and backward slidings, up and down as well as turnable functions.



Improved Visibility by Pillar-less Cabin (Option)

No front nor rear pillars secure wider visibility. Front visibility improved by 10 percent. (compared to conventional models)

No pillar cabin substantially contributes to increasing safety at cargo handlings as well as when traveling.

Excellent visibility 115°



Improved Rear Visibility

Rear visibility improved by newly designed counter weight.



Electric Parking Brake

Brake to be easily on by soft-touch electric switch - only 0.5kg.



Dependable Wet-Disc Parking Brake

No pad adjustments substantially contribute to saving of annual maintenance cost.

Brake Line with an Air Dryer as Standard Equipment.

Dry pressurized air prevents malfunctioning of machines as well as freezing brake-line.





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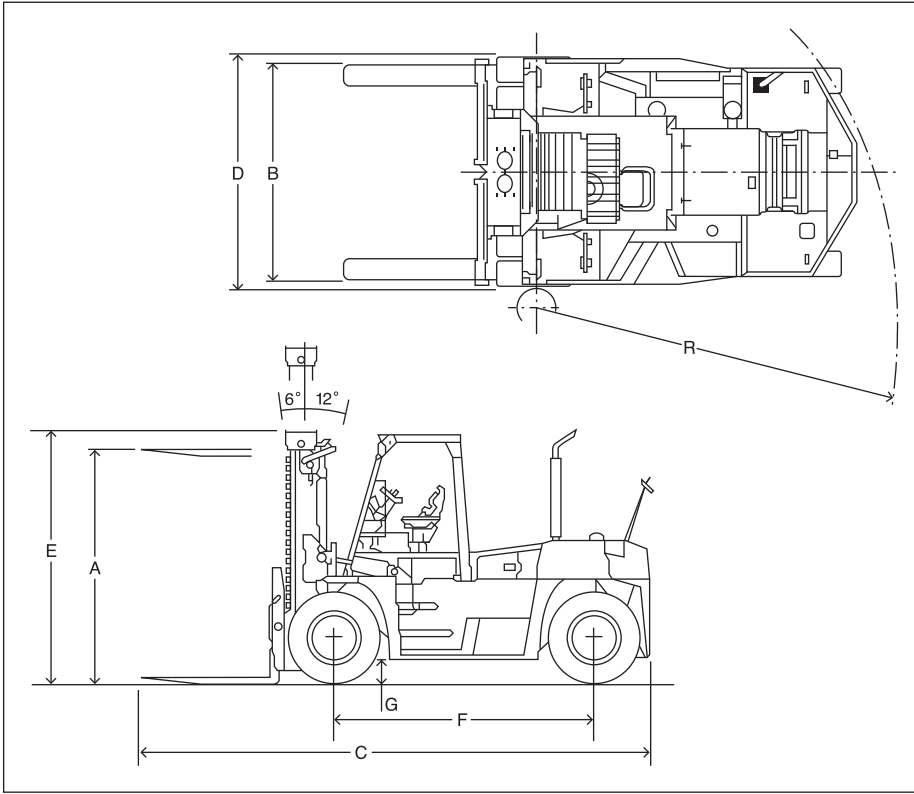
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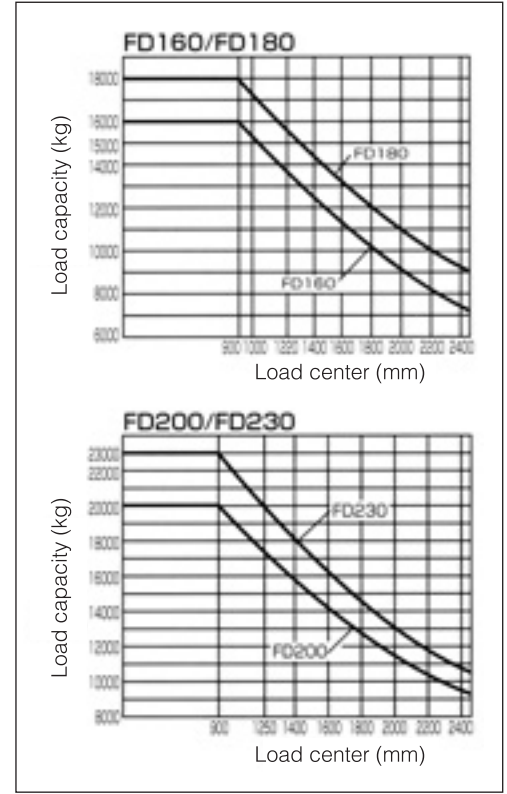


CATALOGUE No. FS06-90S/E
Printed in Japan TA-1603-04

■ Dimensions



■ Load Charts



■ Standard Specifications

Model		FD160-2	FD180-2	FD200-2	FD230-2		
Performance	Load capacity	kg (lbs)	16000 (35000)	18000 (40000)	20000 (44000)	23000 (50000) 20000 (44000)	
	Load center	mm (in)	900 (36)	900 (36)	900 (36)	900 (36) 1250 (49)	
	Maximum fork height	mm (in)	A	3000 (118.1)	3000 (118.1)	3000 (118.1)	3000 (118.1)
	Lifting speed : with load	mm/s (fpm)	330 (64.9)	290 (57.1)	285 (56.1)	230(45.3) 240 (47.2)	
	Mast tilt angle : forward / backward	deg	6 / 12	6 / 12	6 / 12	6 / 12	
	Max. Travel speed	km/h (mph)	34 (21.1)	34 (21.1)	34 (21.1)	32 (19.9)	
	Lateral fork adjustment (outside)	mm (in)	B	790 ~ 2750 (31.1~108.3)	810 ~ 2750 (31.9~108.3)	810 ~ 2750 (31.1~108.3)	950 ~ 2750 (37.4~108.3)
	Turning radius (outside)	mm (in)	R	5000 (196.9)	5000 (196.9)	5150 (202.8)	5350 (210.6)
	Gradeability : with load (1.6km/h)	%	24	20	18	15 16	
Dimensions & Weight	Overall length : with fork	mm (in)	C	7165 (282.1)	7205 (283.7)	7205 (283.7)	7990 (314.6)
	Overall length : without fork	mm (in)		5325 (209.6)	5365 (211.2)	5365 (211.2)	5545 (218.3)
	Fork size : L x W x T	mm (in)		1830 x 250 x 90 (72.0 x 9.8 x 3.5)	1830 x 260 x 100 (72.0 x 10.2 x 3.9)	1830 x 260 x 100 (72.0 x 10.2 x 3.9)	2440 x 310 x 98 (96.1 x 12.2 x 3.8)
	Overall width	mm (in)	D	2970 (116.9)	2990 (117.7)	3060 (120.5)	3060 (120.5)
	Overall height : mast	mm (in)	E	3290 (129.5)	3545 (127.8)	3575 (140.7)	3580 (140.9)
	Overall height : overhead guard	mm (in)		3225 (127.0)	3255 (128.1)	3285 (129.3)	3280 (129.1)
	Wheelbase	mm (in)	F	3650 (143.7)	3650 (143.7)	3650 (143.7)	3650 (143.7)
	Ground clearance	mm (in)	G	300 (11.8)	275 (10.8)	305 (12.0)	290 (11.4)
Total weight	kg (lbs)		22510 (49600)	25040 (55200)	27260 (60100)	30760 (67800)	
Engine & Transmission	Internal combustion engine : model		ISUZU 6BG1T Diesel Engine				
	Internal combustion engine : piston displacement	lit. (in ³)	6.494 (396.3)				
	Internal combustion engine : rated output / engine speed		125kW (170PS) / 2200r.p.m. (SAE GROSS 127kW (170HP) / 2200r.p.m.)				
	Internal combustion engine : maximum torque / engine speed		537N·m (54.8kgf·m) / 1800r.p.m.				
Transmission	Transmission : type		Automatic power-shift transmission				
	Transmission : number of speeds		3 - 3 (Fwd / Rvs)				
Tire & Brake	Tire size		12.00-24-18PR	13.00-24-20PR	14.00-24-24PR	14.00-24-24PR	
	Brake	Brake : service	Air-over-hydraulic disc brake				
		Brake : parking	Built in transmission, wet multiple disc brake				
Steering system		Full hydrostatic power steering					

■ Wide View Mast

Mast Model	Capacity										Max. Fork Height		Overall Mast Height (lowered)									
	Load center 900mm(36in)												1250mm(49in)		FD160-2		FD180-2		FD200-2		FD230-2	
	FD160-2		FD180-2		FD200-2		FD230-2		FD230-2				mm	in	mm	in	mm	in	mm	in	mm	in
	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	mm	in	mm	in	mm	in	mm	in	mm	in		
VM300	16000	35000	18000	40000	20000	44000	23000	50000	20000	44000	3000	118.1	3290	129.5	3545	139.6	3575	140.8	3580	140.9		
VM350	16000	35000	18000	40000	20000	44000	23000	50000	20000	44000	3500	137.8	3540	139.4	3795	149.4	3825	150.6	3830	150.8		
VM400	16000	35000	18000	40000	20000	44000	23000	50000	20000	44000	4000	157.5	3790	149.2	4045	159.3	4075	160.4	4080	160.6		
VM450	16000	35000	18000	40000	20000	44000	23000	50000	20000	44000	4500	177.2	4040	159.1	4295	169.1	4325	170.3	4330	170.5		
VM500	16000	35000	18000	40000	20000	44000	23000	50000	20000	44000	5000	196.9	4290	168.9	4545	178.9	4575	180.1	4580	180.3		
VM550	15000	33000	16000	35000	18000	40000	21500	47000	19000	42000	5500	216.5	4540	178.7	4795	188.8	4825	190.0	4830	190.2		
VM600	14000	31000	15000	33000	16000	35000	20000	44000	18000	40000	6000	236.2	4790	188.6	5045	198.6	5075	199.8	5080	200.0		

Mast Model	Overall Mast Height (raised)								Tilt Angle		Service Weight							
	FD160-2		FD180-2		FD200-2		FD230-2		Fwd / Bwd		FD160-2		FD180-2		FD200-2		FD230-2	
	mm	in	mm	in	mm	in	mm	in	degree	kg	lbs	kg	lbs	kg	lbs	kg	lbs	
VM300	4790	188.6	5040	198.4	5070	199.6	5080	200.0	6 / 12	22510	49600	25040	55200	27260	60100	30760	67800	
VM350	5290	208.3	5540	218.1	5570	219.3	5580	219.7	6 / 12	22680	50000	25210	55600	27430	60500	30990	68300	
VM400	5790	228.0	6040	237.8	6070	239.0	6080	239.4	6 / 12	22850	50400	25400	56000	27620	60900	31230	68800	
VM450	6290	247.6	6540	257.5	6570	258.7	6580	259.1	6 / 12	23190	51100	25740	56700	27960	61600	31760	70000	
VM500	6790	267.3	7040	277.2	7070	278.3	7080	278.7	6 / 12	23360	51500	25920	57100	28140	62000	32000	70500	
VM550	7290	287.0	7540	296.9	7570	298.0	7580	298.4	6 / 12	23530	51900	26100	57500	28320	62400	32250	71100	
VM600	7790	306.7	8040	316.5	8070	317.7	8080	318.1	6 / 12	23700	52200	26270	57900	28490	62800	32480	71600	

■ STANDARD EQUIPMENT AND ACCESSORIES

[Equipment]

- Adjustable suspension seat with seat belt
- Air-dryer for brake line
- Cartridge type air, fuel, engine oil, converter oil and hydraulic filters
- Coolant recovery system
- Cyclopack type double element air cleaner
- Cylinder type bonnet latch
- Drawbar pin
- Durable overhead guard
- Electrically-controlled parking brake
- Engine after glow system
- Engine auto glow system
- Engine oil dipstick
- Fork positioner (manual type)
- Front dual drive wheels
- Full hydrostatic power steering
- Hydraulic oil gauge (view level)
- ISUZU diesel engine with turbo-charger
- Lift circuit cut-off valve
- Load check valve
- Overhead exhaust system
- Pneumatic tires
- Power brake booster
- TCM automatic 3-speed powershift transmission
- Tilt adjustable steering post
- Tilt lock valve
- Torque converter oil dipstick
- Wide view mast
- 1830mm forks (FD160/FD180/FD200)
- 2440mm forks (FD230)

[Accessories]

- Back-up buzzer
- Electric horn
- Head lights
- Operator tool kit
- Rear combination lights (turn signal, tail, stop, back-up and side lights)
- Rear reflectors
- Rear under-view mirror
- Rear view mirrors
- Seat adjust lever
- Turn signal lights (front)

[Switch & Controls]

- Automatic transmission mode select switch (power mode / economy mode)
- Electrically-controlled direction change lever (inc. Neutral safety lock device)
- Electrically-controlled parking brake switch
- Lift lever
- Light switch
- Preheater switch (inc. starter, main switch)
- Speed change hold switch (1st fixed / 2nd fixed / Automatic speed shift)
- Tilt lever
- Turn signal lever

[Instruments]

- Air cleaner clogging warning indicator
- Brake air pressure meter
- Brake air pressure warning indicator
- Brake oil level warning indicator
- Charge indicator
- Converter oil level warning indicator
- Converter oil temperature warning indicator
- Engine oil pressure warning indicator (inc. engine oil filter clogging warning)
- Engine water temperature meter
- Fuel meter
- Hourmeter
- Parking brake indicator
- Speedometer
- Turn signal indicator

■ OPTIONAL EQUIPMENT AND ACCESSORIES

[Equipment]

- Fork positioner (hydraulic motor type)
- CFC free air-conditioner
- Exhaust purifying muffler
- Heater & defroster

- High mast
- Long forks
- Side shifting device
- Steel cabin

[Accessories]

- Central greasing system (manual pump type)
- Fire extinguisher
- Rotating warning light
- Working light (front, rear)

* TCM products and specifications are subject to change without notice.

Large-size Forklift Trucks

25-30 ton

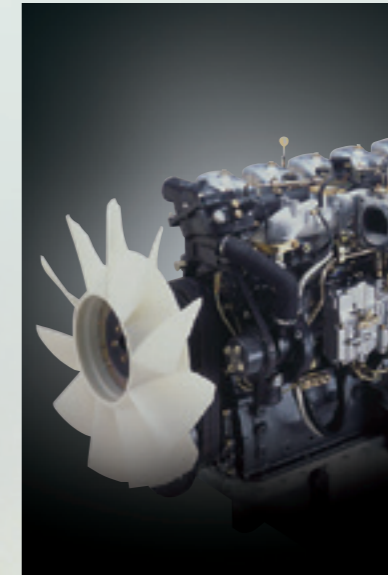
FD250-3 FD300-3



Successor to Our Top Product

The Long-time best-selling products prove the "trust" of users.

The 25-ton TCM forklift truck has been ranked as one of the best-selling product in its class since it's debut in 1989. Our dear customers' affinity for this forklift is due to its undoubtedly superior functionality, durability and industry leading technologies as well as the detailed knowledge and extensive experience at our customer's worksites. We are very proud to release the advanced FD300 following the recently redesigned FD250. FD250 and FD300, equipped with the engine with the performance clearing the emission levels required in EU stage II, US EPA Tier 2 and Japan stage II regulations, wider front and rear visibility and 4-speed automatic transmission – are indeed the leading "Comfortable Forklift Trucks" for this age of advanced material handling.



Innovative engine, clearing stringent environmental regulations.

The mounted 165kW inter-cooler turbo diesel engine is the largest capacity in its class, with sufficient power able to conduct continued rigorous work.

Total displacement **11,940_{cc}**

Rated horsepower **165_{kW}/2,100_{rpm}**
224_{PS}/2,100_{rpm}

Maximum torque **980_{N·m}/1,400_{rpm}**



TCM yellow color available as an option.

The photo shows both FD250-3 and FD300-3 with side shifters fork positioners.

Operator-friendly and comfortable cabin space designed with thoughtful consideration of the operator's difficult job.

Forklift Trucks Comfortable for Operators

Superb ride and low vibration in the cabin due to the adoption of a floating cockpit and deluxe seat.

Industry top-class lifting speeds

FD250 360mm/s (without load) 330mm/s (with load)

FD300 280mm/s (without load) 250mm/s (with load)

LIFTING SPEED

FD250
330/360
mm/s
(with load / without load)

FD300
250/280
mm/s
(with load / without load)

Deluxe seat

Pillar-less cabin

Viscous-mount low vibration system (silicon oil filled)



Low-noise, lower vibration cabin

A liquid-filled rubber mount (Viscous-mount) between the driver's seat and the frame. In addition, an integrated rubber mount in the hydraulic part reduces noise and vibration significantly.

Large-capacity air conditioner (standard equipment)

Very pleasant and relaxing space in the cabin due to a large-capacity air conditioner.

Cooling Efficiency **4.7kW**



Pillar-less cabin and compact meter panel

Excellent visibility achieved by absence of front and rear pillars. Compact meter panel further contributes to clean, wider front visibility.

Integrated switch panel board

Recognition of worksites and operating efficiencies is substantially improved due to the compactly integrated layout of all switches on the right side of the operator.

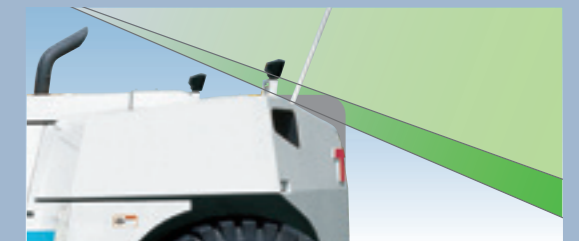


Flat and wider step board

Easier and safer entry and exit.

Improved rear visibility

Rear visibility is largely improved due to reshaping of the counter weight.



Single steering cylinder system

Deluxe multi-functional seat as standard equipment

Well-cushioned deluxe seat with various functions such as reclining, forward/backward sliding, smooth swiveling, upward/downward adjustment, and adjustable armrest position.



Closed wet-disc brakes





Simpler operation reduces physical fatigue even in harsh working conditions.

Operation with higher work efficiency as well as enhanced safety

These large forklift trucks are capable of quickly, easily, and powerfully performing very heavy load operations such as handling metal materials and marine containers.



4-speed automatic transmission (duo-stick system)

Possible to select either 1st gear → 4th gear, or 2nd gear → 4th gear by automatic transmission, similar to passenger cars. The new duo-stick lever system can perform backward and forward shifting while handling the steering wheel.

D(P)	First ⇔ Second ⇔ Third ⇔ Fourth
D(E)	Second ⇔ Third ⇔ Fourth
First gear	Fixed at the first speed
Second gear	Fixed at the second speed

(P)Power mode drive (E)Economy mode drive

Steering wheel with smaller turning radius

Possible to change cargo-handling modes very easily due to the light and sharp hydraulic steering system.



Reduced steering operation force **1.0kg**
3.8 turns

(for FD250)

Hydraulic pilot-type control valves newly adopted for operation levers

Possible to operate and control the vehicle with light touches of the hydraulic assist lever and armrest. Difficult operations can be performed by fingertip maneuvers, as well.

Lever-handling force reduced by **8.2% - 0.7kg**

- ① Lifting ② Tilting ③ Side Shifter(optional)
- ④・⑤ Fork Positioner(optional)

Electronic parking system



Easy to apply parking brake electronically. In addition, the electronic brake is automatically switched on when the engine halts, avoiding negligent braking when the vehicle stops.

Larger fuel tank

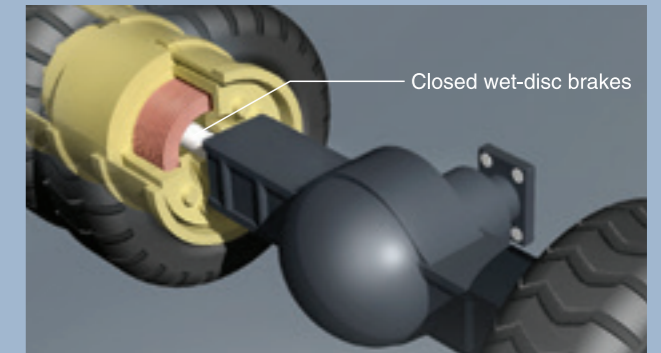
Extended refueling interval contributes to work efficiency.

600 liters



Easier vehicle inspection and maintenance

Both inspection and maintenance of the engine can be easily performed, as the hood opens widely and the side panels open three ways. Moreover, a centralized oil supply system for the mast and a hinged wide cover for the battery box were adopted. Furthermore, inspection and cleaning of the air-cleaner, attached to the upper part of the hood, can be accomplished conveniently.

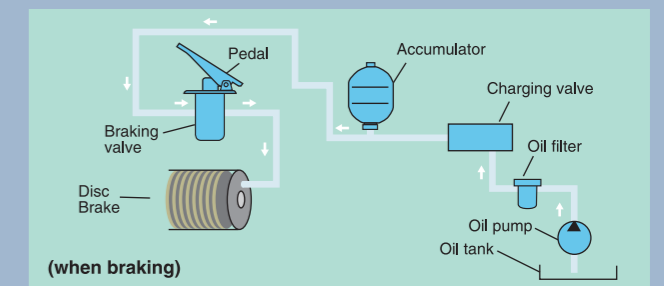


Closed wet-disc brakes

A newly adopted brake with compulsory cooling system. Stable braking and reduced maintenance cost compared to the lining friction loss of a drum braking system.

Full-power braking system

A full-power braking system has been adopted, eliminating the need for air pressure circuit and brake oil, thereby improving maintenance costs dramatically.



Single steering cylinder system

The single steering cylinder system makes stationary steering easy, resulting in comfortable steering maneuverability.





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Large-size Forklift Trucks

25-30 ton

SPECIFICATIONS

FD250-3 FD300-3



STANDARD SPECIFICATIONS

Characteristics	1		UNICARRIERS		UNICARRIERS	
	2		FD250-3		FD300-3	
3	Load Capacity	kg	25000		30500	
4	Load Center	mm	1220		1220	
5	Power Type		Diesel		Diesel	
6	Operator Position		Seated		Seated	
7	Tire Type	Front/Rear	Pneumatic		Pneumatic	
8	Wheels(x=driven)	Front/Rear	4x / 2		4x / 2	

Dimensions	9		3000		3000	
	10		0		0	
12	Overall length : with forks	mm	8750		9135	
13	Fork Size	L x W x T	2440 x 310 x 105		2440 x 330 x 108	
	Fork Spread(Outside)	Max. / Min.	2750 / 950		2750 / 1250	
14	Tilt Angle	Fwd. / Bwd.	6 / 12		6 / 12	
15	Overall length : without forks	mm	6300		6685	
16	Overall Width	mm	3070		3460	
17	Mast Lowered Height	mm	3750		3565	
18	Mast Extended Height	mm	5250		5265	
19	Cabin Height	mm	3590		3670	
	Overhead Guard Height	mm	-		-	
20	Operator's Seat Height	mm	2400		2475	
21	Turning Radius(Outside)	mm	5900		6310	
22	Fork Overhang(Centerline of front axle to front face of forks)	mm	985		1070	
	Rear Overhang	mm	925		1025	
23	Intersectina Aisle	mm	5000		5330	

Performance	24	Speeds	Travel speed (Fwd. / Rvs.)	1st				2nd				3rd				4th			
				km/h	7.5	7.0	6.0	5.5	km/h	13.0	12.0	10.0	9.0	km/h	21.0	19.5	16.0	15.0	km/h
25			Lifting	Full Load	mm/sec	330				250									
				No Load	mm/sec	360				280									
26			Lowering	Full load	mm/sec	400 - 600				400 - 600									
				No Load	mm/sec	400 - 600				400 - 600									
28	Max. Drawbar Pull			Full Load	kN	163				197									
				No Load	kN	118				148									
30	Max. Gradeability*			Full Load	%	22				20									
				No Load	%	27				26									

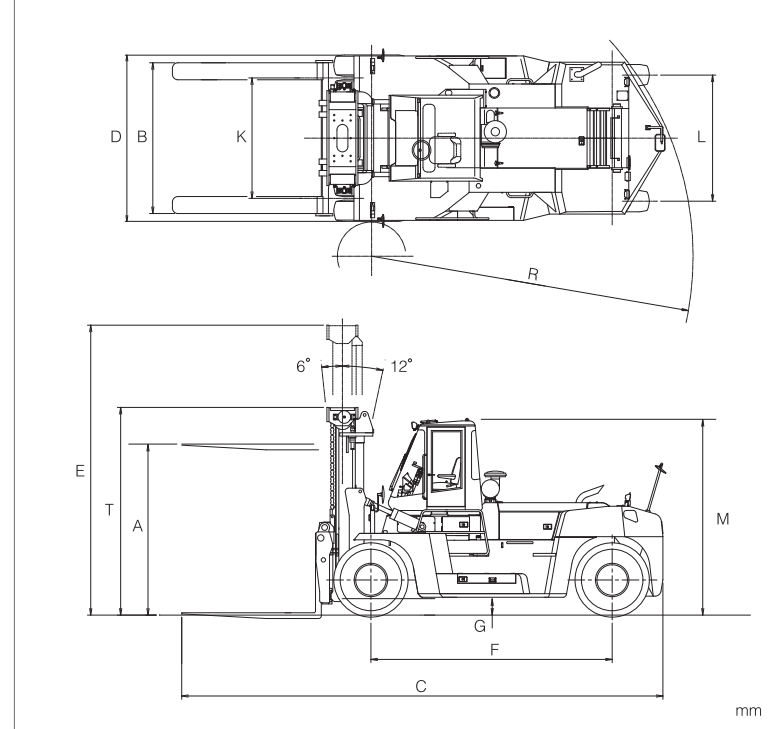
Weight	32	Total Weight	kg		34330		43310	
33	Weight Distribution	Full Load	Front	kg	55000		67330	
			Rear	kg	4330		6480	
			Front	kg	17330		21470	
			Rear	kg	17000		21840	

Chassis & Wheels	35	Tires	Number	Front / Rear		4 / 2		4 / 2	
				Size		14.00 - 24 - 24PR(ID)		16.00 - 25 - 32PR(ID)	
36				Front		14.00 - 24 - 24PR(ID)		16.00 - 25 - 32PR(ID)	
37				Rear		14.00 - 24 - 24PR(ID)		16.00 - 25 - 32PR(ID)	
38	Wheelbase			mm	F	4400		4600	
39	Tread			mm	K	2200		2440	
				mm	L	2300		2530	
	Overhead Clearance			mm		1115		1115	
	Hood Height			mm		2050		2150	
	Drawbar Height			mm		780		870	
	Step Height / Floor Height			mm		-		-	
40	Underclearance	Min. without Load		mm		300		315	
41		Center of Wheelbase		mm	G	330		385	
42	Brake	Service(Foot)				Built in axle - multiple wet disc		Built in axle - multiple wet disc	
43		Parking				Built in mission - wet disc		Built in mission - wet disc	

Engine & Transmission	45	Battery	Voltage / Capacity(5HR)		V / Ah		2 x 12 / 108		2 x 12 / 108	
49	Internal Combustion Engine	Make / Model	MITSUBISHI FUSO 6D24T with turbo-charger / inter-cooler		MITSUBISHI FUSO 6D24T with turbo-charger / inter-cooler					
50			Rated Output / Engine Speed	kW/r.p.m.	165 / 2100		165 / 2100			
51			Maximum Torque / Engine Speed	N-m/r.p.m.	980 / 1400		980 / 1400			
			Number of Cylinder		6		6			
52			Piston Displacement	lit.	11.940		11.940			
			Alternator output	A	50		50			
	Fuel Tank Capacity	Liter	600		600					
55	Transmission	Type	Power - shift		Power - shift					
57		Operating Pressure	Stage	Fwd. / Rvs.	4 - 4		4 - 4			
		For Attachments		MPa(psi)	20,6		20,6			

Note : *Computed values

Dimensions



Mast Model	Capacity		Max. Fork Height	Overall Mast Height (lowered)		Overall Mast Height (raised)		Tilt Angle	Service Weight	
	FD250-3	FD300-3		FD250-3	FD300-3	FD250-3	FD300-3		Fwd / Bwd	FD250-3
VM300	25000	30500	3000	3750	3765	5250	5265	6 / 12	34330	43310
VM350	25000	30500	3500	4000	4015	5750	5765	6 / 12	34530	43560
VM400	25000	30500	4000	4250	4265	6250	6265	6 / 12	34740	43810
VM450	25000	30500	4500	4500	4515	6750	6765	6 / 12	35230	44470
VM500	25000	30500	5000	4750	4765	7250	7265	6 / 12	35430	44670
VM550	24000	30500	5500	5000	5015	7750	7765	6 / 12	35640	44980
VM600	20000	30500	6000	5250	5265	8250	8265	6 / 12	35830	45230

Standard Equipment and Accessories

Equipment

- Automatic 4-speed powershift transmission
- Bonnet gas dumper with locking stay
- Brake cooling oil level view gauge
- Cartridge type filters; engine fuel, engine oil, mission oil & hydraulic oil
- Coolant reservoir tank
- Cyclopack type double element air cleaner
- Delux suspension seat
- Drawbar device in counter weight
- Electrically-controlled parking brake
- Engine oil dipstick
- Fork positioner(manual type)
- Front dual drive wheels
- Full hydrostatic power steering
- Heavy duty pneumatic tires
- Hydraulic oil level view gauge
- Large capacity fuel tank(600 liters)
- Load check valve
- Steel cabin with air-conditioner
- Tilt adjustable steering column
- Tilt cylinder lock valve
- Transmission oil dipstick
- Wet disc brake
- Wide view 2-stage mast
- 2440mm length forks

Accessories

- Buck-up buzzer
- Deluxe floor mat
- Electric horn
- Front combination lights turn signal & clearance
- Head lights
- Operator tool kit
- Rear combination lights, turn signal, tail, stop, back-up
- Rear reflectors
- Rear under-view mirror
- Room mirror
- Side view mirrors
- Turn signal lights(front)
- Working lights(front, rear)

Switch & Controls

- Automatic transmission mode select switch power mode & economy mode
- Electrically-controlled direction change lever inc. neutral safety lock device
- Electrically-controlled parking brake switch
- Lift lever
- Lighting switch
- Speed change hold switch (1st fixed / 2nd fixed / automatic speed shift)
- Starter switch inc. pre-heating & main switch
- Tilt lever
- Turn signal switch

Instruments

- Air cleaner clogging warning indicator
- Brake oil pressure warning indicator
- Brake oil temperature warning light
- Charge indicator
- Engine diagnosis monitor lamps
- Engine oil pressure warning indicator inc. engine oil filter clogging warning
- Engine pre-heating lamp
- Engine thermometer
- Fuel meter
- Hi-beam indicator(head lights)
- Hourmeter
- Parking brake indicator
- Speedometer
- Transmission oil temperature warning indicator
- Turn signal indicator
- Working light indicator

Optional Equipment and Accessories

Equipment

- Alternative fork length
- Alternative mast height
- Central greasing system
- Delux suspension seat with seat belt
- Detachable Ram / Fork attachment
- Fork positioner(hydraulic cylinder type)
- Fork positioner(hydraulic motor type)
- Fork positioner(hyd. cylinder) with side shifter
- Fork positioner(hyd. motor) with side shifter

- Heater & defroster
- Large capacity alternator
- Large capacity battery
- Load weight indicator
- Overhead guard type cab. with wide rubber floor mat
- Ram attachment
- Side shifter
- Split ram attachment

Accessories

- Custom paint-works
- Fire extinguisher
- Rotating warning yellow light(beacon)

Others on request

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<http://www.unicarriers.co.jp>

LADEN CONTAINER HANDLER

37-43 ton

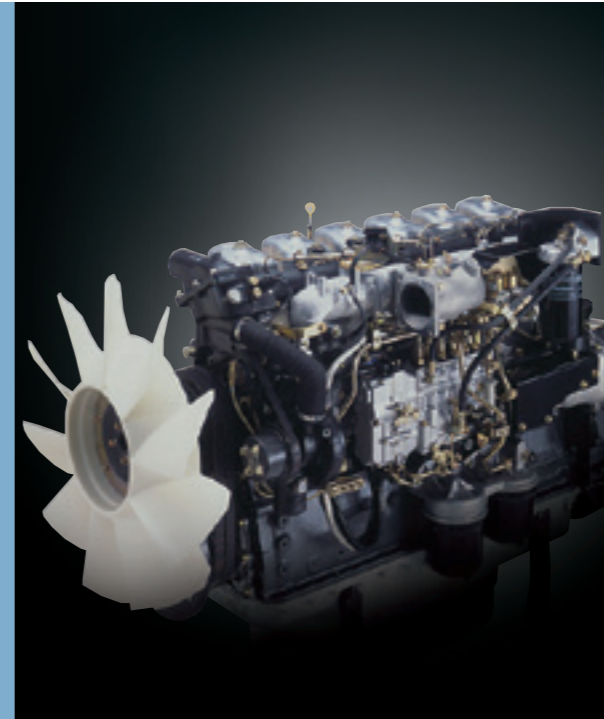
FD370-2 FD430-2



Versatile Trucks, equipped with the new type of Spreader-being capable to stack up to five containers.

Powerful and Driver Friendly Trucks

We have proudly launched its newly revamped heavy duty forklift trucks-model FD430 in response to the needs of ever enlarging container yards as well as heavy industries such as steel mills. "Operator Friendly Trucks"- an ideal pioneering model, mounted with the new engine in compliance with stringent emission controls and being capable of much faster lifting speeds.



The engine meeting the emission levels in Stage II / Tier 2 regulations

The diesel engine with 243kW inter-cooler, the largest capacity in its class. Far sufficient and strong power to perform continuous harsh operations.

Total Displacement (cc)	11940
Rated Output (kW/rpm)	243/2200
(ps/rpm)	330/2200
Maximum Torque (N.m/rpm)	1245/1500
(kg.m/rpm)	127/1500



LIFTING SPEED
30% UP
340
mm/s

Industry top-ranked lifting speed-FD430

Remarkably improved lifting speed
260mm/s → 340mm/s*
(Without Load)
200mm/s → 230mm/s*
(With Load)

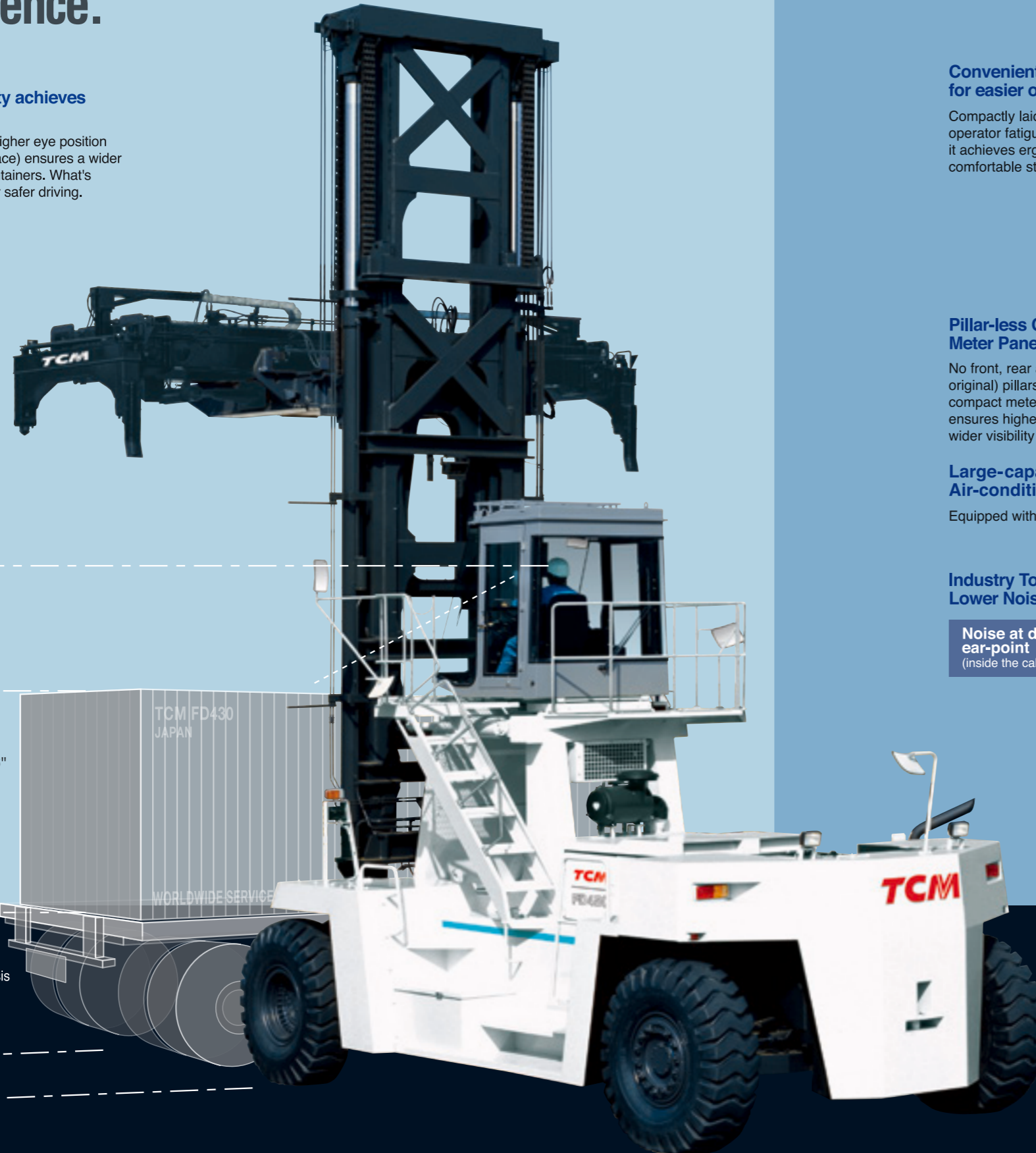
*Figures in comparison with TCM conventional models.

TCM yellow color available as an option.

"The Operator Friendly and Comfortable Cabin", designed through thoughtful and detailed analyses based on the past many years performance and experience.

Wider Operator's Visibility achieves much safer operation

The elevated cabin for driver's higher eye position (4,850mm from the ground surface) ensures a wider view in handling 9'6" marine containers. What's more, it improves a rear view for safer driving.



Eye Point Height
4850 mm

Height of 9'6"
Container
2900 mm

Trailer Chassis
1300 mm

Convenient Lever Layout for easier operation

Compactly laid levers reduce operator fatigue. Moreover, it achieves ergonomically comfortable steering operation.



Pillar-less Cabin & Compact Meter Panel Board

No front, rear and ceiling (TCM original) pillars in the cabin with compact meter panel board, ensures higher safety as well as wider visibility for the operators.



Large-capacity Air-conditioner

Equipped with 4.7Kw (4000kcal/h)

Industry Top Class Lower Noise

Noise at driver's
ear-point
(inside the cabin) **75dB(A)**

Multi-Functional Deluxe Driver Seat

Reclining, forward and backward sliding, up and down adjustment, comfortable suspension seat with easily adjustable arm-rest as standard equipment.



Dependable maneuverability as well as safer operation for superb performance even under very severe working conditions.



Operation Levers with Hydraulic Automatic Control Valves

Soft finger touch operations for heavy duty cargo handling are now achieved by this hydraulic system.

- ① Lifting ② Tilting ③ Side shifter
- ④ Twist Lock ⑤ Indicator 20' container
- ⑥ Spreader telescopic operation switch (20'↔40')
- ⑦ Indicator 40' container



3-Speed Automatic Transmission with Two Stick Levers

It is feasible to be automatically selected from 1st to 3rd speed depending on the extent of operation, similar mechanism as passenger cars.



One Touch Parking Brakes

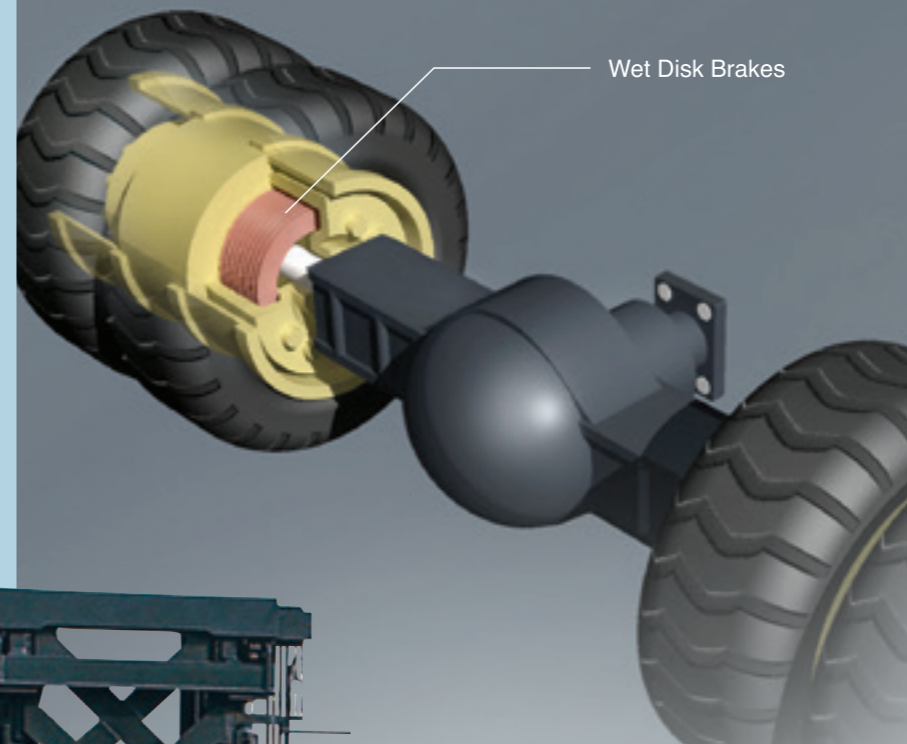
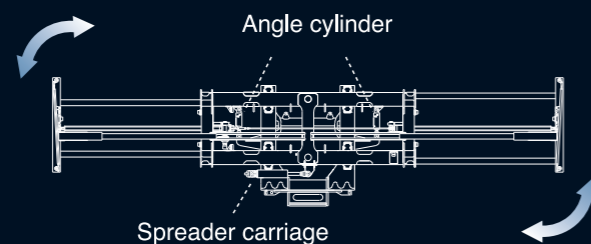
Equipped with the air pressure type spring brake. What's required for the operator is just to pull back the air valve when parking. In case of insufficient air pressure, the brake is automatically locked on.

New type Inter-lock Safety System

Hoist and twist interlocking system to prevent falling the container by mishandling the spreader. Moreover, a new sounding and visual warning device for excessive cargo lifting and tilting.

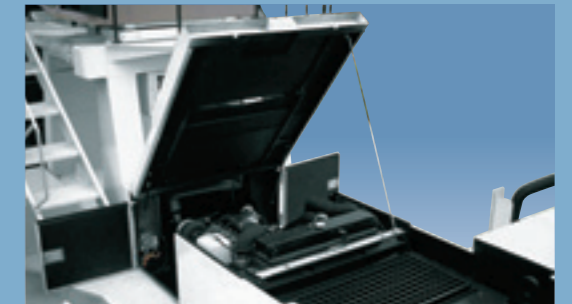
New Spreader Angle System

TCM original spreader angle system. The safe container position is always kept in enough allowance between the spreader and the cabin for safer and efficient container handling.



Dependable Wet-Disk Brakes

Just-on-time stopping as well as efficient functioning by the new type brakes largely contribute to longer life of brake-linings, no abrasive dust and accurate stoppage on the wet surface grounds. Moreover, this achieves lower maintenance costs as well.



Easier Tuning and Inspection

The fully opening top and side panels facilitates easy inspection and maintenance. In addition, integrated grease supply inlet, air-cleaner attached to bonnet, battery cover plate are conveniently equipped.



Heavy-Duty FD40 Forklift Truck (Optional)



Amazing powerful forklift truck (243kW power) efficiently conducts very severe cargo handling such as heavy steel products.



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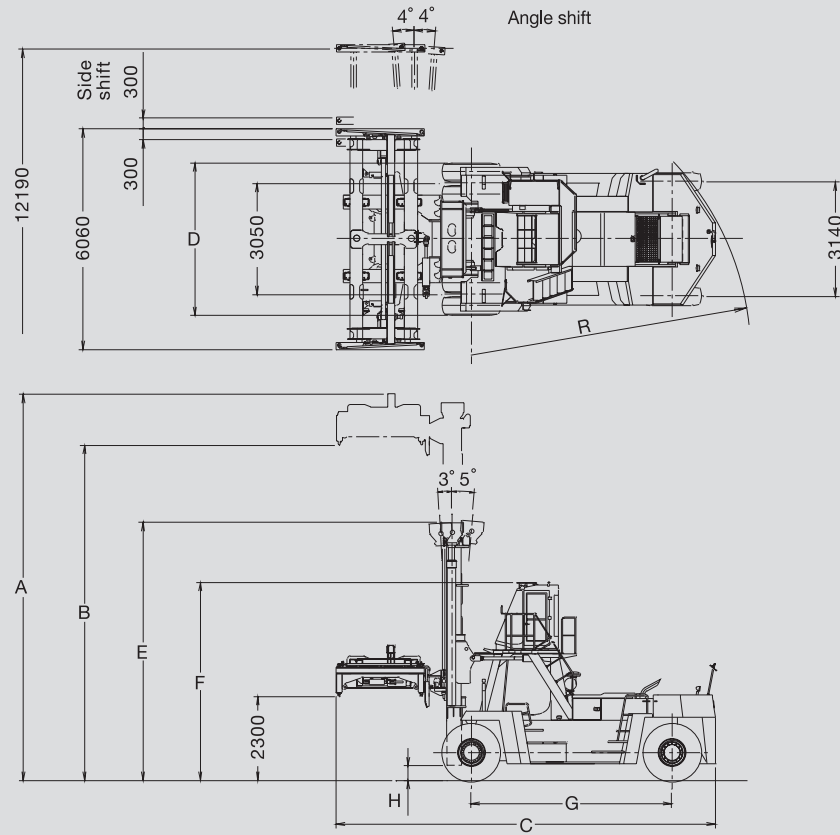


Laden Container Handler FD370-2 · FD430-2

Standard specifications

Model: Top-lifter/Telescopic spreader		FD370-2		FD430-2			
Number of stacking-high(inc. 9'6")		3 STACK		5 STACK			
■ Performance							
Load capacity	kg(lbs)		32000(70500)	35000(77200)	30500(67200)	18000(39700)	
Load center : spreader	mm(in)		under spreader		under spreader		
Max. spreader height : upper surface	mm(in)	A	11050(435)	11050(435)	13500(531)	16800(661)	
Max. lifting height : under spreader	mm	B	2300~9550	2300~9550	2300~12000	2300~15300	
	in		227~376	227~376	227~472	227~602	
Lifting speed	mm/s(fpm)		240(47.2)		230(45.3)		
	mm/s(fpm)		340(66.9)		340(66.9)		
Lowering speed	mm/s(fpm)		560~600(110~118)		560~600(110~118)		
	mm/s(fpm)		400(78.7)		400(78.7)		
Mast tilt angle : forward/backward	deg		3/5		3/5		
Max. Travel speed (with load)	km/h(mph)		22(13.6)		21(13.0)		
	km/h(mph)		22(13.6)		21(13.0)		
Max. Travel speed (without load)	km/h(mph)		30(18.6)		30(18.6)		
	km/h(mph)		30(18.6)		30(18.6)		
Side-Shift range : each	mm(in)		300(11.8)		300(11.8)		
Angle-shift : each	deg		4		4		
Turning radius (outside)	mm(in)	R	6900(272)		7950(313)		
Gradeability : with load(1.6km/h)	%		18	17	16	16	
■ Dimensions & Weight							
Overall length : with spreader	mm(in)	C	9700(382)		10400(409)		
Overall width	mm(in)	D	4200(165)		4200(165)		
Overall height	mm(in)	E	7100(280)		7100(280)	8320(328)	9970(393)
	mm(in)	F	5435(214)		5435(214)		
Wheelbase	mm(in)	G	4800(189)		5500(217)		
Min. ground clearance(mast)	mm(in)	H	405(15.9)		405(15.9)		
Service weight	kg		61700	62800	65500	69100	
	lbs		136000	138000	144000	152000	
■ Engine & Transmission							
Internal combustion engine	: model		MITSUBISHI FUSO 6D24T with turbo-charger/inter-cooler				
	: piston displacement	lit.(in ³)	11.940(728.6)/6cyl				
	: rated output / engine speed		243kW(330ps)/2200r.p.m.				
			SAE GROSS 257kW(345HP)/2200r.p.m.				
	: maximum torque / engine speed		1245N·m(127.0kgf·m)/1500r.p.m.				
	: generator output		24V 90A				
: starting battery		2 x 12V- 120Ah					
: fuel tank capacity	lit.(gal.)		450(119)				
Transmission	: type		Automatic power-shift transmission Y88750X				
	: number of speeds		3 - 3(Fwd / Rvs)				
■ Tire & Brake							
Type of tire	: front/rear		Pneumatic				
Tire size / number	: front		18.00-25-36PR / 4				
	: rear		18.00-25-36PR / 2				
Brake	: service(front braking)		Air-over-hydraulic / built in axle, multiple wet disc brake				
	: parking		Propeller-shaft braked mechanical / duo-surbo type				
Steering system			Full hydrostatic power steering				

Dimensions



STANDARD EQUIPMENT AND ACCESSORIES

[Equipment]

- Adjustable deluxe suspension seat with seat belt
- Air-dryer for brake line
- Automatic 3-speed powershift transmission
- Cartridge type air, fuel, engine oil, converter oil and hydraulic filters
- CFC free air-conditioner
- Cyclopack type double element air cleaner
- Cylinder type bonnet stay with locking function
- Drawbar device
- Electrically-controlled parking brake
- Engine after glow system
- Engine auto glow system
- Engine oil dipstick
- Front dual drive wheels
- Full hydrostatic power steering
- High mounted cabin with air-conditioner
- Hydraulic oil gauge (view level)
- Load check valve
- MITSUBISHI FUSO diesel engine with turbo-charger
- Overhead exhaust system
- Pneumatic tires
- Tilt adjustable steering post
- Tilt lock valve
- Torque converter oil dipstick
- Wide view 2-stage mast

[Accessories]

- Back-up buzzer
- Electric horn
- Head lights
- Operator tool kit
- Rear combination lights (turn signal, tail, stop, back-up and side lights)
- Rear reflectors
- Rear under-view mirror
- Room mirror
- Seat adjust lever
- Side view mirrors
- Turn signal lights (front)
- Working lights (front, rear)

[Switch & Controls]

- Automatic transmission mode select switch (power mode / economy mode)
- Electrically-controlled direction change lever (inc. Neutral safety lock device)
- Electrically-controlled parking brake switch
- Lift lever
- Light switch
- Preheater switch (inc. starter, main switch)
- Speed change hold switch (1st fixed / 2nd fixed / Automatic speed shift)
- Tilt lever
- Turn signal lever

[Instruments]

- Air cleaner clogging warning indicator
- Brake air pressure meter
- Brake air pressure warning indicator
- Brake oil level warning indicator
- Charge indicator
- Converter oil level warning indicator
- Converter oil temperature warning indicator
- Engine oil pressure warning indicator (inc. engine oil filter clogging warning)
- Engine water temperature meter
- Fuel meter
- Hourmeter
- Parking brake indicator
- Speedometer
- Turn signal indicator

OPTIONAL EQUIPMENT AND ACCESSORIES

[Equipment]

- Alternative fork length
- Alternative mast height
- Central greasing system
- Exhaust purifying muffler

- Front 6 wheel drive system
- Middle profile mounted cabin
- Overhead guard type cab.

[Accessories]

- Custom paint-works
- Fire extinguisher
- Rotating warning light (Beacon)

Other on request